

CLAIMS

We Claim:

1. A protective wrap for an item, comprising:

an overwrap material having a first edge and a second edge, the first and second edges being joined substantially adjacent the edges to form a substantially continuous tubing having a cavity, the tubing having a first opening providing access to the cavity of the tubing, and the substantially continuous tubing being adapted to have the item to be wrapped inserted into cavity of the tubing through the first opening.

2. The protective wrap of claim 1, wherein the first and second edges of the overwrap material are secured to one another with a stitching extending longitudinally about the tubing.

3. The protective wrap of claim 1, wherein the overwrap material comprises a laminate composition of a first layer adhered to a second layer.

4. The protective wrap of claim 3, wherein the first layer and the second layer are adhered together with heat.

5. The protective wrap of claim 3, wherein the first layer is a high density material having properties to substantially resist tearing or puncturing of the tubing.

6. The protective wrap of claim 5, wherein the first layer is a high density polyethylene material.

7. The protective wrap of claim 3, wherein the second layer is a low density material having cushioning properties.

8. The protective wrap of claim 7, wherein the second layer is a low density polyethylene foam material.

9. The protective wrap of claim 1, wherein the item to be wrapped in the protective wrap is an automotive product.

10. The protective wrap of claim 9, wherein the automotive product is a automobile bumper.

11. The protective wrap of claim 1, wherein a portion of the substantially continuous tubing opposing the first opening is maintained in a roll prior to having the item inserted into the cavity of the tubing through the first opening.

12. The protective wrap of claim 11, wherein the roll has no core.

13. The protective wrap of claim 2, wherein the first and second edges are connected in an overlapping configuration.

14. The protective wrap of claim 2, wherein the first and second edges are connected in a fin seal configuration.

5 15. The protective wrap of claim 1, wherein the substantially continuous tubing has a length, wherein the length of the substantially continuous tubing is greater than a length of the product adapted to be inserted into the tubing, and wherein the substantially continuous tubing is adapted to be cut into a discrete section to contain the product.

10 16. A covering for protecting an item that is placed within the covering, comprising:

15 a substantially continuous tubing having an inner surface, an outer surface, and a first opening providing access to a cavity of the continuous tubing, the continuous tubing being adapted to have the item to be protected inserted into cavity of the tubing through the first opening, wherein the inner surface of the tubing has cushioning properties to cushion items that are located in the cavity of the tubing, and wherein the outer surface of the tubing has properties to substantially resist tearing or puncturing of the tubing during normal use.

17. The covering of claim 16, wherein the substantially continuous tubing is adapted to be sheared into intervals of tubing, and wherein a length of the intervals of the tubing is less than the length of the substantially continuous tubing.

20 18. The covering of claim 16, wherein the tubing is made of a first layer of material laminated to a second layer of material, the outer surface comprising the first layer of material and the inner surface comprising the second layer of material.

19. The covering of claim 16, wherein the inner surface is made of a low density polyethylene, and wherein the outer surface is made of a high density polyethylene.

25 20. The covering of claim 16, wherein the substantially continuous tubing is made of a sheet of material having a first edge and a second edge, the sheet of material being joined longitudinally adjacent the first and second edges to form the substantially continuous tubing.

30 21. The covering of claim 20, wherein the sheet of material is joined adjacent the first and second edges with a stitching extending longitudinally about the sheet of material.

22. A covering for protecting items that are placed within the covering, comprising:

a substantially continuous tubing having a first opening providing access to a cavity of the tubing for insertion of items to be protected while in the tubing, the tubing being made of a laminate composition of a first layer adhered to a second layer.

5 23. The covering of claim 20, wherein the first layer is made of a high density polyethylene, and wherein the second layer is made of a low density polyethylene.

24. A covering for protecting an automobile bumper to be located within the covering, comprising:

10 a laminate tubing having an inner surface having cushioning properties, an outer surface having protective properties to substantially resist tearing or puncturing of the tubing during normal use, the tubing having an opening providing access to a cavity into which the automobile bumper is inserted, wherein the tubing having a length which is longer than a length of the inserted automobile bumper, and wherein first and second ends of the tubing are sealed to enclose the automobile bumper in the cavity of the tubing.

15 25. A method of manufacturing a protective container, comprising the steps of: providing a sheet material having a protective first surface and an opposing cushioning second surface, the sheet material also having a first edge and an opposing second edge; and,

20 forming a substantially continuous tubing having a cavity by joining a portion of the sheet material adjacent the first edge to a portion of the sheet material adjacent the second edge, wherein the second surface of the sheet material forms a wall of the cavity.

25 26. The method of manufacturing the protective container of claim 25, wherein the sheet material is a substantially continuous sheet material, and wherein the tubing manufactured from the sheet material is a substantially continuous tubing.

27. The method of manufacturing the protective container of claim 25, wherein the step of joining the first and second edges comprises stitching the first and second edges together about a longitudinal axis of the tubing.

30 28. The method of manufacturing the protective container of claim 25, further comprising the steps of:

providing a first material having protective properties;
providing a second material having cushioning properties;

laminating the first and second materials together to form a laminate composition, wherein the sheet material is formed of the laminate composition.

29. The method of manufacturing the protective container of claim 28, wherein the first material is a high density polyethylene.

5 30. The method of manufacturing the protective container of claim 28, wherein the second material is a low density polyethylene.

10 31. The method of manufacturing the protective container of claim 25 wherein the step of joining a portion of the sheet material adjacent the first edge to a portion of the sheet material adjacent the second edge creates a seam, and further comprising the step of cutting the substantially continuous tubing transverse to the seam to create separate pieces of the tubing.

15 32. A method of manufacturing a protective container, comprising the steps of:
providing a first layer of material;
providing a second layer of material;

adhering the first layer of material to the second layer of material to create a laminate material, the laminate material having a first edge, and a second edge;

folding the laminate material such that the first edge and the second edge are substantially adjacent one another;

20 securing a portion of the laminate material adjacent the first edge to a portion of the laminate material adjacent the second edge to create a protective tubing.

33. The method of claim 32, wherein the first layer of material is a high density polyethylene.

34. The method of claim 32, wherein the second layer of material is a low density polyethylene.

25 35. The method of claim 32, wherein the step of securing a portion of the laminate material adjacent the first edge to a portion of the laminate material adjacent the second edge comprises adhering a portion adjacent the first edge to a portion adjacent the second edge.

30 36. The method of claim 32, wherein the step of securing a portion of the laminate material adjacent the first edge to a portion of the laminate material adjacent the second edge comprises stitching a portion adjacent the first edge to a portion adjacent the second edge.

37. An apparatus for converting a substantially continuous tubing of protective material into a protective container for items inserted in the tubing, the apparatus comprising:

5 a cutter having a cutting surface, the cutter engaging a rail and traversing about the rail, wherein the cutting surface of the cutter is adapted to shear the tubing during traversing of the cutter about the rail.

38. The apparatus of claim 37, wherein the rail has a first area and a second area, the cutter traversing the rail from the first area through the second area, and wherein the cutter is adapted to engage the tubing in the second area.

10 39. The apparatus of claim 37, further comprising an engaging mechanism secured to the cutter, the engaging mechanism having a first mating member and the rail having a second mating member, the first mating member slidingly mating with the second mating member.

40. The apparatus of claim 37, further comprising a stand supporting the rail.

15 41. The apparatus of claim 40, wherein the stand is adjacent a surface for supporting the tubing, and wherein a first area of the rail extends distal the surface of the stand.

20 42. The apparatus of claim 37, further comprising a guard that extends over the cutting surface of the cutter to protect the cutting surface during periods of non-use.

43. A system for creating a protective covering from a substantially continuous tubing, comprising:

a length of protective wrap, the protective wrap comprising a tubing having an outer surface and an inner surface, the inner surface defining a cavity; and,

25 a cutter having a cutter surface, wherein the cutter engages the tubing at intervals to shear the tubing into discrete sections, the discrete sections of tubing being adapted to accept an item within the cavity thereof.

44. The system of claim 43, wherein a length of the sections of the sheared tubing is variable.

30 45. The system of claim 43, wherein a length of the sections of the sheared tubing is substantially uniform.

46. The system of claim 43, wherein the tubing is made of a laminate composition having a first layer adhered to a second layer adhered.

47. The system of claim 43 further comprising an unwind apparatus, wherein the tubing is positioned into a roll prior to being sheared into sections, and wherein the unwind apparatus retains the roll of tubing, the unwind apparatus having rollers for allowing the roll of tubing to be unrolled prior to being sheared by the cutter.

5 48. The system of claim 47, wherein the unwind apparatus has a plurality of first rollers and a plurality of second rollers, and wherein the first rollers are offset from the plurality of second rollers to allow for varying diameter rolls of tubing.

10 49. The system of claim 43, further comprising a cutting rail, the cutter engaging the cutting rail and traversing about the rail, wherein the cutting surface of the cutter is adapted to shear the tubing during traversing of the cutter about the rail.

50. The system of claim 49, wherein the cutting rail has a first area and a second area, the cutter traversing the rail from the first area through the second area, and wherein the cutter is adapted to engage the tubing in the second area.

15 51. The system of claim 49, further comprising an engaging mechanism secured to the cutter, the engaging mechanism having a first mating member and the rail having a second mating member, the first mating member slidably mating with the second mating member.

20 52. The system of claim 49, further comprising a surface for supporting the tubing during shearing thereof, the surface being located adjacent the cutting rail.

53. A system for overwrapping a product for protecting the product in the overwrap, comprising:

25 a tubing having an inner surface, an outer surface, a first end having a first opening adjacent the first end, a second end having a second opening adjacent the second end, and a length extending approximately from the first end to the second end, wherein the inner surface of the tubing defines a cavity extending inwardly from the first opening, the cavity being accessible from the first end and the second end of the tubing; and,

means for closing the first and second ends of the tubing to secure product stored within the cavity of the tubing.

30 54. The system of claim 53, wherein the means for closing the first and second ends of the tubing comprises respectively sealing the first and second ends.

55. The system of claim 53, wherein the means for closing the first and second ends of the tubing comprises taping the first end of the tubing, and taping the second end of the tubing.

5 56. The system of claim 55, wherein the first end of the tubing is folded against the outer surface of the tubing and taped in place, and wherein the second end of the tubing is folded against the outer surface of the tubing and taped in place.

10 57. A system for protecting a product during any step of material handling, comprising:

a supply of substantially continuous tubing, the tubing having a leading edge; an unwind supporting the supply of substantially continuous tubing; and, a cutter having a cutter surface, the cutter selectively engaging the substantially continuous tubing at a position distal the leading edge to shear the tubing into intervals of tubing having a length, the intervals of tubing being adapted to accept items within the cavity.

15 58. The system of claim 57, wherein the tubing is made of a laminate composition having a first layer adhered to a second layer adhered.

59. The system of claim 57, wherein the unwind has rollers for allowing a portion of the supply of substantially continuous tubing distal the leading edge of the supply of substantially continuous tubing to be positioned at the cutter.

20 60. The system of claim 59, wherein the unwind has first rollers offset from second rollers to allow for varying diameter rolls of tubing.

61. The system of claim 57, further comprising a cutting rail, the cutter engaging the cutting rail and traversing about the rail, wherein the cutting surface of the cutter is adapted to shear the tubing during traversing of the cutter about the rail.

25 62. The system of claim 57, further comprising a surface for supporting the substantially continuous tubing during shearing thereof, the surface being located adjacent the cutter.

63. A system for protecting a packaged automobile bumper during any step of material handling, comprising:

30 a supply of substantially continuous tubing, the tubing being formed of a two-layer construction wherein the first layer is a high density material and the second layer is a low

density material, the tubing having an opening at a leading edge thereof, the opening providing access to a cavity of the tubing;

an unwind supporting the supply of substantially continuous tubing;
5 a cutter having a cutter surface, the cutter selectively engaging the substantially continuous tubing at a position distal the leading edge to shear the tubing into intervals of tubing having a length, the intervals of tubing being adapted to accept automobile bumpers within the cavity, wherein the unwind has rollers for allowing a portion of the supply of substantially continuous tubing distal the leading edge of the supply of substantially continuous tubing to be positioned at the cutter;

10 a cutting rail, the cutter engaging the cutting rail and traversing about the rail, wherein the cutting surface of the cutter is adapted to shear the tubing transverse to a longitudinal axis of the tubing during traversing of the cutter about the rail; and,

15 a surface for supporting the substantially continuous tubing during shearing thereof, the surface being located adjacent the cutter, the surface further supporting the automobile bumper during insertion of the bumper into the cavity of the tubing.

64. A system for protecting a product during any step of material handling, comprising:

a supply of sheet material having a first surface, a second surface opposing the first surface, a first edge, and a second edge opposing the first edge;

20 a converter having a former for folding a portion of the supply of sheet material between the first edge and the second edge, wherein a first portion of the second surface of the sheet material is adjacent a second portion of the second surface of the sheet material after the portion of the sheet material is folded;

25 a joiner downstream of the converter, the joiner joining the sheet material substantially adjacent the first and second edges of the sheet material, wherein the sheet material having its edges joined forms the tubing;

a cutter downstream of the joiner, the cutter having a cutter surface, wherein the cutter selectively engages the tubing to shear the tubing into intervals of tubing having a length, the intervals of tubing being adapted to accept items within the cavity.

30 65. The system of claim 64, wherein the sheet material comprises a first layer of material having protective properties, and a second layer of material having cushioning properties, wherein the first layer of material is laminated to the second layer of material.

66. A method of overwrapping products to protect the products, comprising the steps of:

providing a length of tubing, the tubing having an inner surface and an outer surface, the inner surface defining a cavity, the tubing further having a first end and a second end;

5 inserting the product into the cavity of the tubing; and,

sealing the first and second ends of the tubing, respectively, to secure the product within the cavity of the tubing.

67. The method of claim 66 wherein the tubing has a length, wherein the product to be inserted into the tubing has a length, and wherein the length of the tubing is greater than the length of the product, and wherein the step of sealing the first and second ends of the tubing comprises folding the tubing adjacent the first end of the tubing and taping the first end of the tubing to the outer surface of the tubing, and folding the tubing adjacent the second end of the tubing and taping the second end of the tubing to the outer surface of the tubing.

10 68. The method of claim 66, wherein the tubing comprises a laminate structure having a outer protective layer and an inner cushioning layer.